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ABSTRACT

The "Cross-Cultural Attitude Inventory" was constructed to measure 1 of the objectives of the bilingual education project of Region XIII Education Service Center in Austin, Texas, serving children aged 6 to 10 years. The educational objective which needed to be measured was whether "the children are taught the history and cultural heritage which reflect the value systems of speakers of both languages." The Elementary and Secondary Act, Title VII project sites chosen for testing included the Artesia, New Mexico; the Alice, Texas; and the Los Nietos and Collier County, California, project sites. Data for item analysis were collected through the testing of 313 primary grade children. Graphic symbols of the Anglo and Mexican American cultures were employed in the Inventory, which was constructed to evaluate attitude. The results indicated that the Inventory may be assumed to provide a gross measure of acculturation suitable for use with groups. The mean score for the Mexican American culture subtest was significantly lower than the score for the Anglo-culture subtest. Among the Mexican items, the Mexican flag, the Spanish word "si," the pinata, the bowl of menudo, and the Mexican hat possessed the highest item-test correlation. Among the United States items, the American flag, the cowboy hat, the piece of bread, and the pickle possessed the highest item-test correlations. (Author/HBC)

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The Cross-Cultural Attitude Inventory:

A Report on Item Analysis and Stability

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The Cross-Cultural Attitude Inventory consists of graphic symbols of two cultures, the United States and Mexico. Under each symbol are five faces for response choices, illustrating the happy-sad dimension. The subject indicates his feelings for the two cultures by marking one face for each symbol. In order to analyze each of the items and to establish stability for the two subtests, 313 subjects, averaged age 7 years, 11 months, participated in the administration of the Inventory during the fall, 1971, while 83 participated in the test-retest phase. Results from this study indicate the Inventory may be assumed to provide a gross measure of acculturation suitable for use with groups (not individuals), when cautious interpretations are made.

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The Cross-Cultural Attitude Inventory: A Report on Item Analysis and Stability

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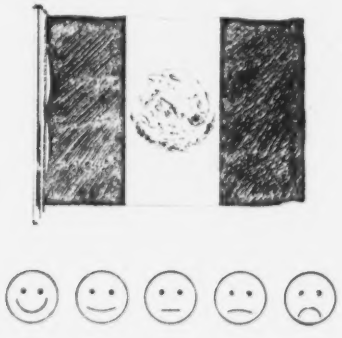
Introduction

The Cross-Cultural Attitude Inventory was constructed to measure one of the objectives of the bilingual education project of Region XIII Education Service Center in Austin, Texas, serving children aged 6 to 10 years. As stated in the Title VII, ESEA Manual for Programs Under Bilingual Education Act, the educational objective which needed to be measured was "The children are taught the history and cultural heritage which reflect the value systems of speakers of both languages." The Service Center's educational objective stressed the "acceptance and appreciation" of the two cultures.

In searching for stimuli for the Inventory the idea of employing graphic symbols of the two cultures was decided upon. Thus prospective symbols were chosen which could be analogously paired, such as the Mexican and United States' Flags, a football player and a bullfighter, etc. The drawings were then taken

to five year old children to assure the clarity of the drawing, with and without giving the name of the symbol. The eleven symbols which were finally chosen also met the criteria of effectively representing such aspects of the United States' and the Mexican cultures as the language, food, clothing, sports, games and flags of each.



A non-verbal response mode was deemed essential due to the large proportion of non-readers in the population considered. Thus under each graphic symbol five faces portray the happy-sad dimension, with the child marking the face which best indicates his feelings. As the child turns to each page in the test booklet, the administrator gives the name of the symbol, reinforcing if necessary the response made.

Scoring the test results involves recording the response to each symbol, with the happiest face weighted 5, to the saddest face weighted 1. Subtest scores are then derived by adding the eleven items of the United States' and the Mexican cultures

separately, with a maximum of 55 the most positive, and a minimum of 11 the most negative. These scores reflect the cultural attitude of the child for each culture.

Data Collection

In the evaluation of bilingual programs, as well as in cross-cultural studies of attitudes and personality development, the concept of a "cultural attitude" has long remained vague and elusive. In facing the task of evaluating Title VII projects, however, many evaluators have had to develop methods for measuring the concept. From those methods developed since the Bilingual Education Act, the National Consortium for Bilingual Education chose the Inventory for dissemination in 1971-72. The project sites chosen for testing include the Artesia, New Mexico; Alice Texas; Los Nietos, and Collier County, California projects where 313 primary grade children were used to collect data for item analysis. Test-retest stability data came from Artesia, New Mexico.

Testing took place during the Fall, 1971. The average age of the 313 students involved in the original testing was 7 years 11 months. The students included 172 males and 141 females from grades 1-5. After 30 days 83 of the original 313 students took the test again for calculation of the stability coefficient.

Results

As can be seen in Table 1, the mean score for the Mexican culture subtest is significantly lower than the score for the Anglo-culture subtest. This is consistent with data collected in the Spring of 1971 from bilingual projects in South Texas. Scores from this early testing as well as results seen since in project evaluations indicate a tendency for students to view the items of the United States' culture more favorably than the items of the Mexican culture.

TABLE I

MEANS, STANDARD DEVIATIONS, AND *t*-VALUE FOR ITEM ANALYSIS
POPULATION: ARTESIA, NEW MEXICO PROJECT (N = 313)

Test Dimension	Mean	SD	t
Mexican-American Items	43.60	7.36	5.29*
Anglo Items	46.55	6.29	

* Significant at the .001 level

Response on the Inventory tended to be negatively skewed. This can be seen in the item response frequencies presented in Table 2. One item, the jalapeño pepper, is distinctive in

TABLE 2

ITEM RESPONSE FREQUENCY DISTRIBUTIONS FOR ITEM ANALYSIS POPULATION: ARTESIA, NEW MEXICO PROJECT (N = 313)

Item	Response Values				
	1	2	3	4	5
Little girl	16	8	36	121	132
Yes	9	12	47	67	178
Chicken soup	14	9	29	69	192
Mexican flag	23	27	63	55	145
Little boy (MA)	30	27	40	112	104
Tortilla	13	11	29	52	208
Little boy (A)	22	29	48	110	104
Hamburger	2	11	16	35	249
Si	22	18	72	81	120
Jalapeno pepper	81	45	54	48	85
Bullfighter	21	40	50	54	148
Pin-the-tail-on-the-donkey	17	18	20	50	208
American flag	7	10	45	51	200
Pinata	8	10	26	41	228
Cowboy hat	23	16	79	58	137
Football player	16	16	36	49	196
Little girl	31	24	44	96	118
Taco	8	12	18	36	239
Menudo	21	13	33	51	195
Mexican hat	27	25	55	73	133
Bread	13	17	38	66	179
Pickle	8	17	24	52	212
Totals	472	445	982	1537	4030

its projection of a bimodal destribution of responses.

Tables 3 and 4 present item means, standard deviations, and item-total score correlations for the Mexican and Anglo

items separately. Of these items, the drawings of the children's faces appear unique in that they tend, generally, to be rated lower, show greater variability and correlate lower with total scores on the two subtests.

TABLE 3

ITEM MEANS, STANDARD DEVIATIONS, AND ITEM-TEST CORRELATIONS (PEARSON r) FOR MEXICAN-AMERICAN ITEMS (N = 313)

Item	Mean	Standard Deviation	Correlation Coefficient
Mexican flag	3.86	1.28	.44
Little boy (MA)	3.74	1.26	.32
Tortilla	4.37	1.06	.40
Si	3.82	1.20	.46
Jalapeno pepper	3.03	1.55	.39
Bullfighter	3.84	1.33	.40
Pinata	4.50	.95	.44
Little girl (MA)	3.78	1.29	.36
Taco	4.55	.95	.41
Menudo	4.23	1.20	.44
Mexican hat	3.83	1.29	.52

Note: Correlation coefficients have been corrected for spurious item-test overlap.

TABLE 4

ITEM MEANS, STANDARD DEVIATIONS AND ITEM-TEST CORRELATIONS (PEARSON r) for Anglo Items) (N = 313)

Items	Mean	Standard Deviation	Correlation Coefficient
Little girl (A)	4.10	1.04	.19
Yes	4.25	1.03	.37
Chicken soup	4.32	1.05	.32
Little boy (A)	3.78	1.20	.33
Hamburger	4.65	.78	.42
Pin-the-tail-on the-donkey	4.32	1.16	.42
American flag	4.36	.99	.44
Cowboy hat	3.86	1.24	.48
Football player	4.25	1.16	.41
Bread	4.21	1.11	.49
Pickle	4.40	1.04	.44

Note: Correlation coefficients have been corrected for spurious item-test overlap.

Among the Mexican items, the Mexican flag, the Spanish word sí, the piñata, the bowl of menudo, and the Mexican hat possessed the highest item-test correlation. Among the United States' items, the American flag, the cowboy hat, the piece of bread and the pickle possessed the highest item-test correlations. The jalapeño pepper of the Mexican items and the chicken soup of the United States' items had noticeably low item-test correlations.

Tables 5 and 6 present the results of first and second administrations with 83 students, using time interval of 30 days. Test-retest mean scores remained reasonably close for both subsections of the Inventory. Stability coefficients were .49 for the eleven Mexican items and .58 for the eleven United States' items.

TABLE 5

TEST-RETEST MEANS, STANDARD DEVIATIONS, AND *t*-VALUES FOR CROSS CULTURAL ATTITUDE INVENTORY: ARTESIA NEW MEXICO PROJECT, (N = 83)

Test Dimensions	Test Mean	Test SD	Retest Mean	Retest SD	*t*
Mexican-American Items	42.56	6.53	43.77	6.68	1.63*
Anglo Items	46.18	6.36	45.93	5.91	.40*

* Not significant

TABLE 6

TEST-RETEST STABILITY COEFFICIENTS FOR CROSS CULTURAL ATTITUDE INVENTORY: ARTESIA, NEW MEXICO PROJECT (N = 83)

Test Dimensions	Test-Retest Correlations	
	MA Items	Anglo Items
Mexican-American Items	.49	---
Anglo Items	---	.58

Discussion

When evaluating the stability coefficients, one should keep in mind the nature of the variable being assessed, the number of items in each subtest of the Inventory, and the length of the time interval between administrations. For the Cross-Cultural Attitude Inventory, all three of these factors tended to reduce the stability coefficient obtained. First, the variable cultural attitude is a difficult psychological construct to reliably measure. Second, the length of the Inventory (11 items for each subsection) is extremely short for reliably measuring a psychological construct. Third, the longer the interval between test and retest, the lower the resulting reliability coefficient. With these factors in mind, the stability coefficients, while low, can be considered good, particularly since the students involved were in a bilingual program designed to provide acculturation experience.

Although the stability coefficients for each subtest are relatively good, the Mexican subtest items are the less stable of the two sets with generally more negative responses and more variance in the responses elicited. These results may be considered indicative of the discriminatory value of the two subtests, as the Mexican culture can be thought of as a more distant, less known, and therefore uncertain part of the lives

of the students tested. The United States' culture is certainly more familiar, as the children involved are a living part of the American culture itself. It is interesting to note that the mean score for the Mexican culture did improve slightly, which can be seen as a function of the students' participation in a bilingual program where the Mexican culture is stressed.

The general negative skewness of the responses to the stimuli, a phenomena noted repeatedly in data from bilingual projects, may well be a function of the extensive exposure of the students to the "happy face" so popular in the past few years, as well as the generally positive orientation of early primary students to the foods, games, sports, clothing, and flags of both cultures.

The exceptions to this phenomena appear to support this interpretation, as the faces of the children of the two cultures elecited more negative, variable, and unique responses, indicative of the influence of a probable separate factor akin to self concept or peer relationships. The jalapeño pepper in eliciting a bimodal response distribution, points to the definite limitations of using graphic stimuli, especially of foods which may cause a response to the object itself, not to the cultural milieu associated with the object. The

jalapeno pepper, in view of its rather strong effect on the senses of taste and smell, would reasonably cause a large number of children to respond negatively, marking the face showing an extreme frown. Besides pointing the way to effective revision of the Inventory, such response tendencies also indicate the effectiveness of the five faces as response mode, especially for young children who can follow directions but cannot read.

In evaluating the effectiveness of the Cross Cultural Attitude Inventory, one should remember the limitations of the test and the scope of this study. The data reported here is limited to several project sites and, relatively speaking, a small number of bilingual students. While the Inventory does possess a relatively good degree of test-retest reliability, adequate validity data still must be collected. Revisions of selected items undoubtedly should be made, as well as the addition of carefully selected new items. The Inventory in its present form can be assumed to provide a gross measure of acculturation suitable for use with groups (not individuals), provided cautious interpretations are made.

Preferably the Inventory should be used in its present form to evaluate the effectiveness of bilingual and other projects where an educational objective includes the enhancement of cultural attitudes. Particular care should be taken on the

part of evaluators to ensure that no one, especially teachers, are provided the scores of individual students. The evaluation of such objectives would most effectively include anecdotal reporting and impressions of impartial visitors to the project site as supplements to the test results, with the use of comparison groups from the locale.

In addition to its use as an evaluative instrument, the Inventory provides an effective tool for various research possibilities. Among the studies which could possibly be conducted, investigations of the relationships of cultural attitudes to such variables as age, geographic location, generation removed from Mexico, and educational background of children involved may be explored. The Inventory also provides a convenient means of controlling for an independent variable in cross-cultural research of personality and intellectual development.

Studies which are currently under way include the development of parallel forms for older children, forms for children of other cultures and subcultures, and an investigation of the effectiveness of graphics versus language as stimuli and response modes. A number of tests are presently using graphics as stimuli and/or response modes, particularly in measuring the affect domain in young children. Hopefully the devices and

results presented in this paper will stimulate and help others facing such problems. The authors welcome the sharing of your responses and word of similar projects which may aid in the development of still more effective measures in the future.